

Table S1 Univariable and multivariable Cox regression model for predictors of cancer-specific survival in patients with LNR <0.23 and LNR ≥0.23

Variable	LNR <0.23				LNR ≥0.23			
	Univariate		Multivariate		Univariate		Multivariate	
	HR	P	HR	P	HR	P	HR	P
Age, years	1.010	0.285			1.017	0.301		
Gender								
Male	Ref.				Ref.			
Female	1.354	0.145			0.757	0.414		
Race								
White	Ref.				Ref.			
Others	1.041	0.839			1.254	0.469		
Marital status								
Unmarried	Ref.				Ref.			
Married	0.794	0.143			1.153	0.602		
Primary site								
Pyriiform sinus	Ref.				Ref.			
Others	1.004	0.981			1.307	0.364		
Tumor size, cm	1.014	0.001	1.011	0.049	1.018	0.047	1.016	0.068
Tumor grade								
G1 + G2	Ref.				Ref.			
G3 + G4	0.926	0.625			0.769	0.338		
T stage								
T1–T2	Ref.		Ref.		Ref.			
T3–T4	1.510	0.019	1.254	0.316	1.642	0.124		
N stage								
N1	Ref.				NA	NA	NA	NA
N2	1.393	0.087			Ref.		Ref.	
N3	1.268	0.622			2.201	0.022	1.931	0.083
M stage								
M0	Ref.		Ref.		Ref.			
M1	3.756	0.010	2.995	0.062	1.261	0.699		
Surgical type								
Local tumor resection	Ref.				Ref.			
Pharyngectomy	1.136	0.687			1.005	0.993		
Pharyngectomy with laryngectomy	1.457	0.118			1.790	0.160		
POAT								
Without	Ref.				Ref.		Ref.	
With	0.795	0.240			0.423	0.006	0.489	0.037

HR, hazard ratio; LNR, lymph node ratio; NA, not available; POAT, postoperative adjuvant therapy.

Table S2 Univariable and multivariable Cox regression model for predictors of overall survival in patients with LNR <0.23 and LNR ≥0.23

Variable	LNR <0.23				LNR ≥0.23			
	Univariate		Multivariate		Univariate		Multivariate	
	HR	P	HR	P	HR	P	HR	P
Age, years	1.016	0.046	1.019	0.019	1.028	0.073		
Gender								
Male	Ref.				Ref.			
Female	1.250	0.220			0.846	0.585		
Race								
White	Ref.				Ref.			
Others	1.077	0.659			1.350	0.293		
Marital status								
Unmarried	Ref.				Ref.			
Married	0.789	0.077			0.990	0.967		
Primary site								
Pyriform sinus	Ref.				Ref.			
Others	0.988	0.928			1.240	0.437		
Tumor size, cm	1.011	0.004	1.012	0.003	1.018	0.037	1.015	0.075
Tumor grade								
G1 + G2	Ref.				Ref.			
G3 + G4	0.966	0.794			0.733	0.220		
T stage								
T1–T2	Ref.				Ref.			
T3–T4	1.299	0.068			1.422	0.220		
N stage								
N1	Ref.				NA	NA		
N2	1.195	0.261			Ref.			
N3	0.988	0.976			1.853	0.068		
M stage								
M0	Ref.		Ref.		Ref.			
M1	3.866	0.003	3.569	0.013	1.940	0.160		
Surgical type								
Local tumor resection	Ref.				Ref.			
Pharyngectomy	1.284	0.334			0.883	0.812		
Pharyngectomy with laryngectomy	1.396	0.098			1.911	0.094		
POAT								
Without	Ref.				Ref.		Ref.	
With	0.761	0.096			0.417	0.003	0.459	0.016

HR, hazard ratio; LNR, lymph node ratio; NA, not available; POAT, postoperative adjuvant therapy.